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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/559,867	04/26/2000	Patrick C. Tetzlaff	EN-3093-US	1617
27062	7590	11/03/2003	EXAMINER	
ZIOLKOWSKI PATENT SOLUTIONS GROUP, LLC (BMCA)			STEVENS, MAURICE E	
14135 NORTH CEDARBURG ROAD			ART UNIT	
MEQUON, WI 53097			PAPER NUMBER	

2855

DATE MAILED: 11/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/559,867

Applicant(s)

TETZLAFF ET AL.

Examiner

Maurice Stevens

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MW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 21-36 and 47-57 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 21-36 and 47-57 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 21, 24-27 and 47-50 are rejected under 35 U.S.C. 102(b) as being anticipated by Tomisawa et al (5617833).

In regards to claim 1, Tomisawa et al disclose a diaphragm assembly for being connected between an engine exhaust path and an engine control unit, said diaphragm assembly comprising a diaphragm housing; and a diaphragm positioned in said housing and separating a first chamber and a second chamber, said first chamber configured to be in flow communication with the engine exhaust path (fig1, {3 to 5}), and said second chamber configured to be in flow communication with the engine control unit (fig.1 , {8 to 9 to 5}).

In regards to claim 2, Tomisawa et al disclose a diaphragm assembly wherein said diaphragm housing comprises a first housing member and a second housing member, said diaphragm between said first and second housing members (fig 1, {5}).

In regards to claim 3, Tomisawa et al disclose a diaphragm assembly wherein an inner surface of said first housing member also is a side wall of said first chamber, said inner surface having a conical shape to facilitate drainage of

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water from said first chamber (fig. 1, {5 is conical}).

In regards to claim 4, Tomisawa et al disclose a diaphragm assembly wherein said first chamber comprises a first column and said second chamber comprises a second volume, said first volume greater than said second volume (fig 1, {5 bottom chamber is greater then the top one}).

In regards to claim 24, Tomisawa et al disclose an apparatus for sensing changes in exhaust gas pressure during engine operation, said apparatus comprising diaphragm means configured to be coupled between an exhaust path of the engine and an electronic control unit and for transmitting exhaust pulse to the electronic control unit (fig 1, (5 is between 3 exhaust path and 8 the control unit)).

In regards to claim 25, Tomisawa et al disclose an apparatus wherein said diaphragm means comprises a diaphragm housing, and a diaphragm positioned in said housing and separating a first chamber and a second chamber, said first chamber configured to be in flow communication with the engine exhaust path, and said second chamber configured to be in closed flow communication with the electronic control unit (fig 1, {5}).

In regards to claim 26, Tomisawa et al disclose an apparatus wherein said diaphragm housing comprises a first housing member and a second housing member, said diaphragm between said first and second housing members (fig 1, {5}).

In regards to claim 27, Tomisawa et al disclose an apparatus wherein an

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inner surface of said first housing member also is a side wall of said first chamber, said inner surface having a conical shape to facilitate drainage of water from said first chamber (fig 1, {5}).

In regards to claim 47, Tomisawa et al disclose a kit for a marine engine, comprising a diaphragm assembly comprising a diaphragm housing, and a diaphragm positioned in said housing and separating a first chamber and a second chamber, said first chamber configured to be in flow communication with an engine control unit, and said second chamber configured to be in flow communication with an engine exhaust path (fig 1, {5}).

In regards to claim 48, Tomisawa et al disclose a kit wherein said diaphragm housing comprises a first housing member and a second housing member, said diaphragm between said first and second housing members (fig 1, {5}).

In regards to claim 49, Tomisawa et al disclose a kit wherein an inner surface of said first housing member also is a side wall of said first chamber, said inner surface having a conical shape to facilitate drainage of water from said first chamber (fig 1, {5}).

In regards to claim 50, Tomisawa et al disclose a kit wherein said first chamber comprises a first volume and said second chamber comprises a second volume, said first volume greater than said second volume (fig 1, {5}).

Claim Rejections - 35 USC § 103

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-8 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomisawa et al in view of Caldwell (3915136).

In regards to claims 5 and 51, Tomisawa et al do not implicitly disclose a diaphragm assembly wherein said o-ring and said diaphragm member are integral to each other and Caldwell does not implicitly disclose this limitation either but Caldwell does disclose a diaphragm member (fig 2, {188}) that is deemed to be a o-ring and a controller member (fig.2, {186}) that is deemed to be the diaphragm and these two components are integral to each other. Therefore, it would have been obvious to one of ordinary skill in the art at the invention was made to incorporate the teachings of Caldwell in the system of Tomisawa et al in order to insure that the diaphragm is properly held in place and that the diaphragm holds in place and potential leaks are avoided.

In regards to claim 6, Tomisawa et al and Caldwell do not implicitly disclose a diaphragm assembly wherein said o-ring and said diaphragm member are fluorosilicone however, it would have been obvious at the time the invention was made to use fluorosilicone as the material of the o-ring and the diaphragm because a flexible and high temperature resistant material would have had to been used for dealing with the temperature of the exhaust gas and remain

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flexible so the diaphragm can vibrate.

In regards to claim 7, Tomisawa et al and Caldwell do not implicitly disclose wherein said diaphragm housing comprises an o-ring groove for receiving said o-ring but however, it would have been obvious at the time the invention was made to one having ordinary skill in the art to modify Caldwell to be used in the system of Tomisawa et al for the purpose of using a groove to hold an o-ring into place and to further make a tight seal or engagement between the o-ring and the diaphragm to avoid leaks..

In regards to claim 8, Tomisawa et al and Caldwell do not implicitly disclose wherein said diaphragm housing comprises a first housing member and a second housing member, said first and second housing members each comprising an o-ring groove that when said housing members are assembled, said diaphragm o-ring is trapped between said first and second housing members in said grooves but Caldwell does show the diaphragm member (fig 1, {188 deemed to be the o-ring}) and the control member (fig 1, {186 deemed to be the diaphragm}) but also as stated in the previous paragraph above is the motivation to have a groove with an o-ring but it would also be obvious to make more than one o-ring with a groove if you already have one.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been

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obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 22-23, 28-36 and 52-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomisawa et al in view of Breton (6382014).

In regards to claim 22, Tomisawa et al do not disclose at least partially inserting a probe through an opening in the engine securing the probe in place so that at least a portion of the probe extends into an exhaust path of the engine, engaging one end of a tube to the probe so that during engine operation exhaust pulses sensed by the probe are transmitted through the probe to the tube; and engaging a second of the tube to the inlet of the diaphragm assembly. However, Breton discloses at least partially inserting a probe through an opening in the engine securing the probe in place so that at least a portion of the probe extends into an exhaust path of the engine (column 5, lines 53-63), engaging one end of a tube to the probe so that during engine operation exhaust pulses sensed by the probe are transmitted through the probe to the tube; and engaging a second of the tube to the inlet of the diaphragm assembly (fig 1, {40}). Therefore it would have been obvious at the time the invention was made to one having ordinary skill in the art to modify Tomisawa et al according to the teachings of Breton for the purpose of the probe to sense the pressure of the exhaust gas and develop differential pressure from the upstream side and downstream side.

In regards to claims 23 and 36, Tomisawa et al do not disclose wherein securing the probe in place comprises the step of threadedly engaging the probe within an opening in the engine, However, Breton discloses wherein securing the

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probe in place comprises the step of threadably engaging the probe within an opening in the engine (fig. 3, {13 and 131 threadably engaged through 133}). It would be obvious at the time the invention was made to modify Tomisawa et al according to the teachings of Breton for the purpose of supply a more secured mount for the sensor or probe.

In regards to claims 28, Tomisawa et al do not disclose probe means for sensing exhaust gas pressure during engine operation, and engagement means secured to said probe means for securing said probe so that said probe, at least partially extends within an exhaust path of the engine during engine operation however, Breton discloses probe means for sensing exhaust gas pressure during engine operation, and engagement means secured to said probe means for securing said probe so that said probe, at least partially extends within an exhaust path of the engine during engine operation (fig. 3, {131 and 13}). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify Tomisawa et al according to the teachings of Breton for the purpose of using probe means in an exhaust gas passage to develop a differential flow between the downstream side and upstream side and mounting the probe so a better and sturdy hold of position in the flow communication path of the exhaust gas.

In regards to claims 29, 30, 52 and 53, Tomisawa et al do not disclose wherein said probe means comprises an elongate probe body comprising a hollow, cylindrical shaped member, wherein said cylindrical shaped member comprises at least one opening through a side wall of said cylindrical shaped

member however, Breton discloses wherein said probe means comprises an elongate probe body comprising a hollow, cylindrical shaped member, wherein said cylindrical shaped member comprises at least one opening through a side wall of said cylindrical shaped member (fig 3, {131a-f and 13}). It would have been obvious at the time the invention was made to modify Tomisawa et al with the teachings of Breton for the purpose of having a probe with longitudinal channels for high and low pressure gas to travel through.

In regards to claims 31 and 54, Tomisawa et al do not disclose wherein three openings extend through said cylindrical shaped member side wall, said openings being radially spaced about 120° apart from each adjacent opening but Breton discloses wherein three openings extend through said cylindrical shaped member side wall, said openings being radially spaced about 120° apart from each adjacent opening (fig 3, {131a-f and 13}). It would have been obvious at the time the invention was made to modify Tomisawa et al with the teachings of Breton for the purpose of having a probe with longitudinal channels for high and low pressure gas to travel through.

In regards to claims 32 and 55, Tomisawa et al do not disclose wherein said elongated probe body further comprises a cap secured to and closing an open end of said cylindrical shaped member but Breton discloses wherein said elongated probe body further comprises a cap secured to and closing an open end of said cylindrical shaped member (fig. 1, {top of 27} or fig 3, {133}). It would have been obvious to have a cap to secure an open end of a probe so

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that the exhaust gas being sensed for pressure will be accurate.

In regards to claims 33-35 and 56-57, Tomisawa et al do not disclose a pellet located within said probe means, wherein said pellet comprises sintered metal, wherein said engagement means comprises an engine engagement assembly secured to said probe means and configured to engage to the engine so that said probe means at least partially extends into the engine exhaust path Breton discloses, a pellet located within said probe means, wherein said pellet comprises sintered metal, wherein said engagement means comprises an engine engagement assembly secured to said probe means and configured to engage to the engine so that said probe means at least partially extends into the engine exhaust path (fig 1, {27} and fig.3, {131}). It would have been obvious at the time the invention was made to modify Tomisawa et al according to the teachings Breton for the purpose of something to mount the probe with so that the probe can detect exhaust gas by partially exposing part of the probe in the exhaust stream.

In regards to claims 52, Tomisawa et al do not disclose further comprising a probe for being secured to the marine engine, said probe comprising an elongate probe body, and an engine engagement assembly secured to said probe body and configured to engage to the engine so that said probe body at least partially extends into the engine exhaust path however, Breton discloses further comprising a probe for being secured to the marine engine, said probe comprising an elongate probe body, and an engine engagement assembly secured to said probe body and configured to engage to the engine so that said

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probe body at least partially extends into the engine exhaust path (fig. 3, {131 and 13}). It would have been obvious at the time the invention was made to modify Tomisawa et al according to the teachings of Breton for the purpose of using a better and more sturdy probe design for having holes going through it and an engagement means for secure the probe in a position where it can sense the exhaust gas.

Response to Arguments

Applicant's arguments with respect to claims 1-8, 21-36 and 47-57 have been considered but are moot in view of the new ground(s) of rejection.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maurice Stevens whose telephone number is (703) 306-5895. The examiner can normally be reached on M-F, 6:00am-3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (703) 305-4816. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

MS/2855

10-27-03


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